REMARKS

Applicant hereby responds to the final Office Action dated August 1, 2007 and the Advisory Action dated October 1, 2007, in the above-referenced patent application. Applicant thanks the Examiner for carefully considering the application.

Status of Claims

Before this Amendment, claims 1-24 were pending. By way of this reply, new claims 25-27 have been added. Thus, claims 1-27 are currently pending. Claims 1, 9, 14, and 17 are independent.

Claim 14 was rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application Pub. No. 20030076448 ("Pan"). Claims 1-13 and 15-24 were rejected under 35 U.S.C. 103(a) as being unpatentable over Pan in view of U.S. Patent No. 6,870,956 ("Qi").

Claim Amendments

Claims 1-24 have been amended for clarification purposes and to correct minor informalities. New claims 25-27 have been added. No new matter has been added by way of these amendments and none the amendments is made in view of prior art.

Drawings

Applicant again respectfully requests that the Examiner indicates acceptance of the formal drawings filed on October 9, 2003.

Rejections under 35 U.S.C. § 102

Rejection of claim 14 is respectfully traversed because for at least the following reasons, Pan does not disclose all of the claimed limitations, and because the rejection as set forth in the final Office Action was improper.

The claimed invention is directed to a method and system for detecting fade in an area of each of a sequence of video frames. Independent claim 14 requires, in part, (i) "subtracting a given noise mean from the said difference and squaring the obtained value," (ii) "generate a sum of the squared values for each of a plurality of pixels within the logo area," (iii) "generating an average of the sums," and (iv) "comparing said average with a given noise level, such that if a difference between the said average and the noise level is greater than the threshold value then fade is detected." Pan, in contrast to the claimed invention, fails to disclose at least the above-mentioned limitations.

In making the rejection in view of Pan, the final Office Action has randomly picked phrases from Pan resembling those used in the above-mentioned claim limitations, and has taken the phrases of Pan out of context. For example, the final Office Action starts from paragraph [0075] of Pan, then back to paragraph [0065], then forward to [0076], then to [0078], and then finally back to [0040], in an attempt to pick keywords and use those keywords out of context of Pan to purportedly arrive at the claimed limitations (i)-(iv) above. More specifically, in attempting to supply limitation (i), the Examiner has picked the word *noise* from paragraph [0075], disregarding the fact that Pan merely discloses *due to the noise or other factors…* Indeed, throughout the disclosure, Pan is completely silent with respect to "subtracting a given noise mean" as claimed. The Office Action then jumps back to paragraph [0065] of Pan in an attempt to supply the keyword "mean," disregarding the fact that the *mean* as supplied by [0065] of Pan has nothing to do with noise. Applicant further respectfully submits that by breaking up the limitation "a given noise mean" into pieces, the final Office Action has improperly dissected the claimed invention into isolated, out-of-context words.

The Examiner then relied upon paragraph [0073] of Pan to supply (iv), "comparing said average with a given noise level." Paragraph [0073] of Pan is silent with respect to "noise." Further, if the Examiner has interpreted the *threshold* of Pan as the claimed "given noise level," Applicant respectfully disagrees with such interpretation. To help put into context said *threshold* as taught by Pan, referring to paragraph [0072] of Pan, it is clear that said threshold has a unit of *distance* d, and has nothing to do with the claimed "given noise level."

Further, after erroneously attempting to supply the claimed limitation "such that if a difference between the said average and the noise level is greater than the threshold value" using paragraph [0075] of Pan, the final Office Action jumps back to paragraph [0040] and asserts that paragraph [0040] discloses the claimed limitation "then a fade is detected." Applicant respectfully disagrees. Paragraph [0075] of Pan clearly discloses that the system is *to detect a 'true' logo template*, which has nothing to do with the "fade" as claimed. Although paragraph [0040] has the word *fade*," putting paragraph [0040] of Pan into context by further referring to paragraph [0041]:

> ...it is normally sufficient to select one frame with a distinguishable logo as a logo template to represent the *starting or ending logo transition*" (emphasis added)...,

it becomes clear that the system of Pan simply neglects the gradual fade in and out, and only looks for an appearance or disappearance of the logo as the definition of the transition. The *fade* as mentioned in the context of Pan is merely an adverse factor that should be neglected or approximated as an abrupt switch between two states of "no logo" and "with logo." Accordingly, Pan does not disclose detection of "fade" as the Examiner has suggested.

In view of the above, Pan fails to disclose at least the above-mentioned limitations as recited in independent claim 14 of the present application. Thus, claim 14 is patentable over Pan for at least the reasons discussed above. In addition, the rejection is improper. Accordingly, withdrawal of the rejection is respectfully requested.

Rejections under 35 U.S.C. § 103

Rejections of claims 1-13 and 15-24 are respectfully requested because for at least the reasons set forth below, Pan and Qi, whether considered separately or in combination, fail to show or suggest the claimed invention.

Independent claims 1 and 17 of the present application each require, in part, "calculating a **stochastic measure of the area** based on a standard deviation of differences in pixel values," and "detecting **fade** in the area by comparing the stochastic measure with a given **noise level**" (emphasis added). Independent claims 9 and 14 each require, in part, determining a difference between a current pixel value and a reference pixel value, "subtracting a mean of a noise from the difference," and "comparing an average with a **given noise level**" (emphasis added). Pan and Qi, whether considered separately or in combination, fail to show or suggest at least the above-mentioned limitations.

In the final Office Action, the Examiner maintains that Pan discloses a method of detecting "fade." This is respectfully traversed. As discussed above, Pan is directed to detecting *abrupt* appearance or disappearance of an image, in contrast to the claimed "fade" as defined in the present application, *i.e.*, a gradual change of an image.

Further, the final Office Action relies upon Webster's Dictionary to interpret the claimed "stochastic measure" as equivalent to probability. This is respectfully traversed. Applicant is entitled to be his or her own lexicographer. Thus, the Specification of the present application should be used as a primary reference for the meaning of the claimed "stochastic measure." Moreover, even the Webster's Dictionary, cited by the Examiner, interprets "stochastic" as:

2). (a): *Involving or containing* a random variable. (Not relied upon in the final Office Action).

2). (b): *Involving probability or chance.* (Relied upon in the final Office Action).

Such interpretation treats "stochastic" clearly distinctly in the different contexts of random variable and probability. In the case of *random variable*, the phrase *containing* is used. However, in describing *probability*, the Dictionary only cautiously uses *involving*, but not *containing* or anything implying equivalence between the probability and being stochastic. This is not surprising. As well known in the art, and as Applicant has previously argued, although a stochastic process may be described using the probability language, a probability description is *not* an indication of, nor is it equivalent to, the "stochastic" measure as claimed. Pan uses probability language to describe a large number of frames, some of which have the log while most do not, and the relationship among the frames is *not* stochastic. Similarly, Qi is silent with respect to the "stochastic measure" as required by independent claims 1 and 17.

Applicant further respectfully submits that Pan and Qi, whether considered separately or in combination, further fail to show or suggest the "calculating a **stochastic measure of the area**" as claimed. Paragraph [0081] of Pan clearly describes that the probability densities, $p^P(x|Q)$ and $p^P(x|P)$ (which have been incorrectly equated by the Examiner to the claimed "stochastic measure"), are statistical descriptions of the *frames*. That is, Pan is directed to a statistical measure of a large number of frames, not the "stochastic measure **of the area**" as claimed.

As discussed above, Pan fails to show or suggest the "noise mean" and the "noise level" as required by independent claims 9 and 14. Qi is also silent with respect to such limitations and fails to supply that which Pan lacks. In particular, Qi only discloses, in the background section (col. 2, line 10), *strong noises* such as *loud noises* as adversary factors in prior art methods. Like Pan, Qi is completely silent with respect to a quantitative description of noise such as a *noise level.*

Moreover, it is respectfully submitted that there is no reason, motivation or suggestion to combine Pan and Qi. Pan is directed to detecting abrupt log appearances or disappearances. Qi is directed to *shot* detection. The concept of *shot*, as clearly defined in col. 1, lines 30-35 of Qi, refers to a block of a number of frames. Neither of the cited references is directed to detecting fade. Further, Pan teaches away from the claimed invention by setting a large minimum distance d_{mn} (*e.g.*, longer than 1 second; *see*, *e.g.*, paragraph [0073]) to *avoid* the gradual logo change. Indeed, a gradual logo change on the time scale of 1 second is treated by Pan as an *abrupt* change of logo between appearance and disappearance without fading therebetween.

Applicant further respectfully submits that in determining the differences between the prior art and the claims, the question under **35 U.S.C. 103** is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious. *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983); *Schenck v. Nortron Corp.*, 713 F.2d 782, 218 USPQ 698 (Fed. Cir. 1983). Not only has the final Office Action failed in meeting this burden, the final Office Action has even gone further in improperly rejecting the claims by breaking up the claimed limitations into out-of-context words and attempting to locate out-of-context keywords from the prior art reference to support the rejections.

In view of the above, Pan and Qi, whether considered separately or in combination, fail to show or suggest the claimed invention as recited in independent claims 1, 9 and 17 of the present application. In addition, there is no reason, motivation or suggestion to combine Pan and Qi. Thus, independent claims 1, 9 and 17 and dependent claims 2-8, 10-13, 15, 16, and 18-24 of the present application are patentable over Pan and Qi for at least the reasons set forth above. Accordingly, withdrawal of the rejections is respectfully requested.

New Claims 25-27

New claims 25-27 depend from claim 1 and thus should be allowable for at least the same reasons discussed above with respect to claim 1. Accordingly, entry and favorable consideration are respectfully requested.

CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the rejection should be withdrawn, and all of the claims be allowed. Accordingly, reexamination, reconsideration and allowance of all the claims are respectfully requested. If the Examiner feels that a telephone interview would help advance the examination of the present application, the Examiner is encouraged to call the undersigned attorney or his associate at the telephone number listed below.

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Respectfully submitted,

10/30/7

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